

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-3 (canceled).

4. (previously presented): A semiconductor device comprising:
 - a semiconductor chip having a plurality of electrodes;
 - wiring materials having a plurality of lead terminals;
 - a metal plate connecting with said plurality of electrodes at a first portion of said metal plate and connecting with said plurality of lead terminals at a second portion of said metal plate;
 - a molding resin sealing said semiconductor chip, parts of said wiring materials, and said metal plate, wherein
 - a surface of said metal plate is uneven and joined to said molding resin;
 - wherein said metal plate connects with said plurality of electrodes and said plurality of lead terminals by a plating formed on said metal plate;
 - wherein said metal plate has at least one bent part between said first portion and said second portion; and
 - wherein said plating is formed only on said first portion and said second portion.
5. (Original) The semiconductor device as claimed in claim 4 wherein said metal plate has a groove formed at said bent part in a direction crossing a direction of said lead terminals.

6. (Original) The semiconductor device as claimed in claim 5 wherein said groove is formed in a recessed face side of said bent part of said metal plate.

Claims 7-10 (canceled).

11. (currently amended): ~~The semiconductor device as claimed in claim 8 A~~
semiconductor device comprising:

a semiconductor chip having a plurality of electrodes;
wiring materials having a plurality of lead terminals elongated in a first direction;
a metal plate having a first main surface and a second main surface opposed to said first
main surface, wherein said metal plate is joined to said plurality of electrodes at a first end
portion of said first main surface and is joined to said plurality of lead terminals at a second end
portion of said first main surface facing to said first end portion to connect said plurality of
electrodes and said plurality of lead terminals; and

a molding resin sealing said semiconductor chip, parts of said wiring materials, and said
metal plate, wherein

said second main surface of said metal plate is roughened, said second main surface
having a plurality of recesses filled with said molding resin,

wherein said metal plate connects with said plurality of electrodes and said plurality of
lead terminals by a plating formed on said first main surface,

wherein said metal plate has at least one bent part elongated in a second direction
crossing said first direction between said first end portion and said second end portion,

wherein said plating is formed on said first end portion and said second end portion,
wherein said plurality of lead terminals have a stepped part,
wherein said metal plate are connected with said stepped part by a conductive bonding
material, and

wherein said metal hole has at least one through hole.

12. (previously presented): A semiconductor device comprising:
a semiconductor chip having a plurality of electrodes;
wiring materials having a plurality of lead terminals;
a metal plate connecting with said plurality of electrodes at a first portion of said metal plate and connecting with said plurality of lead terminals at a second portion of said metal plate;
a molding resin sealing said semiconductor chip, parts of said wiring materials, and said metal plate, wherein
a surface of said metal plate is uneven and joined to said molding resin;
wherein said plurality of lead terminals have a stepped part; and
wherein said metal plate is connected with said stepped part by a conductive bonding material; and
wherein said surface of said metal plate has a plurality of whisker platings.

Claims 13-15 (canceled).

16. (currently amended): ~~The semiconductor device as claimed in claim 13 A~~
semiconductor device comprising:
a semiconductor chip having a plurality of electrodes;
wiring materials having a plurality of lead terminals elongated in a first direction;
a metal plate having a first main surface and a second main surface opposed to said first
main surface, wherein said metal plate is joined to said plurality of electrodes at a first end
portion of said first main surface and is joined to said plurality of lead terminals at a second end
portion of said first main surface facing to said first end portion to connect said plurality of
electrodes and said plurality of lead terminals; and
a molding resin sealing said semiconductor chip, parts of said wiring materials, and said
metal plate, wherein
said second main surface of said metal plate is roughened, said second main surface
having a plurality of recesses filled with said molding resin,
wherein said metal plate connects with said plurality of electrodes and said plurality of
lead terminals by a plating formed on said first main surface,
wherein said metal plate has at least one bent part elongated in a second direction
crossing said first direction between said first end portion and said second end portion,
wherein said plating is formed on said first end portion and said second end portion,
wherein said metal plate has claw parts being extended from an edge part of said metal
plate and being fitted in intervals of two of said wiring materials, and
wherein said metal plate has at least one through hole.

17. (previously presented): A semiconductor device comprising:
a semiconductor chip having a plurality of electrodes;
wiring materials having a plurality of lead terminals;
a metal plate connecting with said plurality of electrodes at a first portion of said metal plate and connecting with said plurality of lead terminals at a second portion of said metal plate;
a molding resin sealing said semiconductor chip, parts of said wiring materials, and said metal plate, wherein
a surface of said metal plate is uneven and joined to said molding resin;
wherein said metal plate has claw parts fitted in said wiring materials; and
wherein said surface of said metal plate has a plurality of whisker platings.

Claims 18-22 (canceled).

23. (currently amended): The semiconductor device, comprising:
a semiconductor chip having at least one electrode;
a lead terminal arranged at a distance from said semiconductor chip;
a metal plate having a first main surface and a second main surface opposed to said first main surface, said first main surface having connected at a first end portion thereof connected to
said at least one electrode of said semiconductor chip and at a second end portion thereof
connected to said lead terminal; and
a molding resin encapsulating said semiconductor chip, said lead terminal and said metal plate;

~~said metal plate having a surface which is subject to such a treatment that enhances adhesion strength between said metal plate and said molding plate~~
wherein said second main surface has a roughened surface which enhances adhesion strength between said metal plate and said molding resin and no connection with any electrode.

Claim 24 (canceled).

25. (currently amended): The device as claimed in claim 23, wherein said surface of said metal plate is dimpled to enhance the adhesion strength between said metal plate and said molding ~~plate resin~~.

26. (currently amended): ~~The device as claimed in claim 23~~ A semiconductor device, comprising:

a semiconductor chip having at least one electrode;
a lead terminal arranged at a distance from said semiconductor chip;
a metal plate connected at a first end portion thereof to said at least one electrode of said semiconductor chip and at a second end portion thereof to said lead terminal; and
a molding resin encapsulating said semiconductor chip, said lead terminal and said metal plate;

said metal plate having a surface which is subject to such a treatment that enhances adhesion strength between said metal plate and said molding resin,

wherein a plurality of through holes are provided in said metal plate to enhance the adhesion strength between said metal plate and said molding ~~plate~~ resin.

27. (currently amended): ~~The device as claimed in claim 23~~ A semiconductor device, comprising:

a semiconductor chip having at least one electrode;
a lead terminal arranged at a distance from said semiconductor chip;
a metal plate connected at a first end portion thereof to said at least one electrode of said semiconductor chip and at a second end portion thereof to said lead terminal; and
a molding resin encapsulating said semiconductor chip, said lead terminal and said metal plate;

said metal plate having a surface which is subject to such a treatment that enhances adhesion strength between said metal plate and said molding resin,

wherein said surface of said metal plate is subject to thicker plating to enhance the adhesion strength between said metal plate and said molding ~~plate~~ resin.

28. (New) The semiconductor device as claimed in claim 23, wherein an average roughness is 0.1 to 0.4 μmRa

29. (New) A semiconductor device, comprising:

a semiconductor chip having a plurality of electrodes;
a wiring having a lead terminal;

a metal plane connecting with at least one of said electrodes at a first portion of said metal plate and connecting with said lead terminal at a second portion of said metal plate; a molding resin sealing said semiconductor chip, a part of said wiring, and said metal plate,
wherein a surface of said metal plate is uneven and joined to said molding resin;
wherein said metal plane connects with said at least one of said electrodes and said lead terminal by a plating formed on said metal plate;
wherein said metal plate has at least one bent part between said first portion and second portion; and
wherein said plating is formed only on said first portion and second portion.